

TAXONOMIC NOTES ON *CALATHEA* (MARANTACEAE) FROM THE  
VENEZUELAN GUAYANA: A NEW SPECIES AND A NEW COMBINATION

Helen Kennedy

Herbarium, Botany Department, University of British Columbia, Vancouver,  
British Columbia V6T 2B1 CANADA

ABSTRACT

*Calathea neblinensis* spec. nov., which occurs in Amazonas in Venezuela and Brasil, and in Vaupés in Colombia, is described as new. *Calathea cannoides* comb. nov. is based on *Thymocarpus cannoides* Nicolson, Steyermark, & Sivadasan, from Venezuela and Brasil. The new species and new combination are needed for inclusion in the treatment of *Calathea* for the *Flora of the Venezuelan Guayana*.

KEY WORDS: *Calathea*, Marantaceae, nomenclature, taxonomy, Venezuelan Guayana

*Calathea neblinensis* Kennedy, spec. nov. TYPE: VENEZUELA. Amazonas: Dept. Río Negro, near Cerro de La Neblina Base Camp which is on Río Mawarinuma, in forest near stream, 140 m, 0° 50' N, 66° 10' W, 5 Feb 1984, R.L. Liesner 15662 (HOLOTYPE: MO; Isotypes: F, NY).

Planta ad 1.1 m alta. Folia basalia 3-7(9), lamina anguste obovata vel elliptica, acuminata, basi cuneata, ad 60 X 11 cm, supra obscure viridia, glabra, secus costa glabra vel minute tomentosa, subtus viridi-grisea vel purpurea, glabra, vel sparse minute tomentosa; pulvinus glaber vel supra tomentosus, 2.3-5.5 cm longus cum porca ad juncturam pulvini et petioli; petiolus ad apicem glaber, prope basin tomentosus vel villosus, 0-47 cm longus; vagina tomentosa vel villosa ad basin, 11-43 cm longa. Spica ovoidea ad 8 X 4.5 cm, pedunculo prope basin tomentoso vel villosus, ad 14.5 cm longo; bracteae 12-32, spiraliter dispositae, obovatae vel interdum ovatae, obtusae, virides vel purpureae, minute tomentosae ad marginem vel ubique tomentosae, ad 4 X 3.5 cm; bracteolae 2, indurato-claviculatae; sepala 11.5-15.0 mm longa; corolla alba, staminodia alba. Capsula obovoidea, ca. 11 X 8 cm, semina ca. 6 X 5 mm.

Acaulescent to shortly caulescent herb, (0.47)0.65-1.1 m high, bearing 3-7(9) basal leaves and none cauline. Cataphylls narrowly ovate, apex acute, reddish purple, densely pubescent, base sericeous, to 45 cm long. Leaf blade chartaceous, narrowly obovate to elliptic, apex acuminate, occasionally obtuse with acumen, base narrowly cuneate; (18)25-60 X (3.6)6.5-11 cm, secondary veins (12)14-21 per 3 cm, cross veinlets 32-40 per 5 mm. Leaf blade above dark green, glabrous, midrib lighter green, glabrous or minutely tomentose; leaf surface below light greyish green or deep red-purple, glabrous except for very margin minutely appressed tomentose, occasionally minutely tomentose throughout, midrib appressed tomentose. Pulvinus elliptic in cross section, olive green or purplish, glabrous or minutely tomentose along upper side, articulate, commonly with a slight ridge (ridge frequently tomentose) at junction with petiole, (1.5)2.3-5.5 cm long. Petiole green or tinged with purple, glabrous or subglabrous above, pubescent below, 0-47 cm long. Leaf sheath green tinged red-purple, sides appressed tomentose to villous, margin ciliate, sericeous at base, center back glabrous to subglabrous apically, 11-43 cm long. Stem internodes between basal leaves sericeous.

Inflorescence 1 (rarely 2), terminal on the leafy shoot, borne below the leaf blades, imbricate, ovoid, 5.4-8.0 X 2.8-4.5 cm. Peduncle reddish purple, glabrous to subglabrous just below the inflorescence, densely tomentose to villous toward base, especially on swollen basal portion, (1.5)6.5-14.5 cm long. Bracts 12-32, spirally arranged, variable in shape, obovate to occasionally depressed ovate, apex obtuse, rarely retuse in basal bracts, upper bracts proportionally longer and narrower, 2.1-4.0 X 1.6-3.5 cm; each bract subtending 3 or more flower pairs. Outer surface of bracts green to purple, minutely tomentose along margin, the central portion subglabrous to densely tomentose or subvillous throughout; inner surface glabrous or tomentose apically. Bicarinate prophyll membranaceous, ovate, apex obtuse or asymmetrically lobed with one side higher than the other, glabrous, (1.5)2.3-4.4 X 1.1-1.6 cm, 0.7-1.2 cm wide, carina to carina. Secondary bract membranous, narrowly elliptic to ovate, apex rounded, glabrous or occasionally with margins pilose, 2.2-3.2 X 1.0-1.4 cm. Bracteoles 2 per flower pair, claviculate, medial, (2)2.3-3.6 cm long.

Sepals narrowly ovate to oblong, acute to obtuse, nearly glabrous (few hairs seen at 30X) to pilose, more densely so toward base, 11.5-15.0 X 2 mm. Corolla and staminodes white; corolla tube glabrous; corolla lobes subequal, elliptic to obovate, anther ca. 2 mm long. Ovary glabrous or with dense fringe of hairs at apex, ca. 2 mm long.

Capsule obovoid with raised rim, ca. 11 X 8 mm; crowned by a persistent calyx. Seeds triangular, ca. 6 X 5 X 4 mm.

Other collections: VENEZUELA. Amazonas: Cerro de La Neblina, Río Yatua, rain forest SE of Base Camp, 140 m, 14 Dec 1953 *B. Maguire, J.J. Wurdack, & G.S. Bunting* 36777 (NY); 29 Jan 1954, *B. Maguire, J.J. Wur-*

dack, & G.S. Bunting 37400 (NY); Cerro Neblina, trail due S from base camp, mature lowland forest, 140 m, 0° 50' N, 66° 10' W, 10 Apr 1984, A. Gentry & B. Stein 46521 (VEN); 27 Apr 1984, A. Gentry & B. Stein 47019 (VEN); Dept. Río Negro, Neblina Base Camp on the Río Mawarinuma, low-lying rain forest near river, 140 m, 0° 50' N 66° 10' W, 17 Jul 1984, G. Davidse & J.S. Miller 27433 (MO, UBC); 2 km E of San Carlos de Río Negro, ca. 20 km S of confluence of Río Negro and Brazo Casiquiare, forest with white sand soil, edge of stream, 120 m, 1° 56' N 67° 03' W, 7 Apr 1979, R.L. Liesner 6348 (MO); Dept. Río Negro, laja at Culimacare along the Brazo Casiquiare, lowland rain forest and bamboo patch surrounding laja, 80 m, 1° 58' N, 66° 50' W, 26 Jul 1984, G. Davidse 27918 (MO).

COLOMBIA. Vaupés: Río Piraparaná, environs of Catholic mission of San Miguel, trail to old runway, 24 Oct 1976, E.W. Davis 127a (F), 127b (F); environs of Mitú, trail from the house of Enrique Portua to the Cerro of Mitú, in wet primary forest, 30 Oct 1976, E.W. Davis 196 (F, GH); Riberas del Río Inirida (69° 45' W), Raudal Guacamayo, left bank, 180 m, 4 Feb 1953, A. Fernández 2131 (US).

*Calathea neblinensis* is characterized by the several clustered basal leaves with cuneate bases and a raised ridge (more evident in dried material) at the junction of the petiole and the pulvinus, the usually single inflorescence of all fertile (flower subtending) bracts, the claviculate bracteoles and white corolla and staminodes. It belongs to *Calathea* section *Breviscapus* Benthham in the broad sense. This species shows considerable variation over its range. The Colombian plants tend to be smaller with proportionally narrower, more coriaceous leaves and fewer, more densely pubescent bracts than the Venezuelan plants. One plant, from São Paulo de Olivença, Amazonas, Brasil (Mori, et al. 9180), which may pertain to this species, is unusual in having densely pubescent bracts with slightly reflexed margins and broader, obtuse leaf bases. However, intermediate individuals between it and the Venezuelan plants have not been seen.

The specific epithet, *neblinensis*, refers to the prevalence of this species in the vicinity of Cerro de La Neblina.

*Calathea cannoides* (Nicolson, Steyermark, & Sivadasan) Kennedy, *comb. nov.* BASIONYM: *Thymocarpus cannoides* Nicolson, Steyermark, & Sivadasan, Brittonia 33:24, Fig. 1. 1981. TYPE: VENEZUELA. Bolívar: southeast end of Cerro Pitón, Cordillera Epicara, Alto Río Cuyumi, 40 m, 5 Sep 1962, B. Maguire, J.A. Steyermark, & C. Maguire 53608 (HOLOTYPE: VEN [sheet 1, inflorescence]; Isotypes: VEN [sheet 2, leaf], NY, MO, US).

*Calathea cannoides* is indeed an unusual and distinctive species, having greatly reduced and totally thickened calviculate bracteoles. These are similar

in shape to those found in some Asian and African taxa (Nicolson, *et al.* 1981). However, specimens of *Calathea* aff. *straminea* Petersen (*Prance 24012* [NY]) from Amazonian Brasil and Perú, have reduced, shortened, clavicate bracteoles 4-5 mm long, intermediate between those of *C. cannoidea* and those of other species in the "Ornata group" of *Calathea*. This indicates that the reduction of the clavicate bracteoles found in *C. cannoidea*, though unusual for *Calathea*, are not necessarily independently derived. Occasionally, the clavicate bracteoles are vestigial or absent in some individuals within a single population, such as in *C. bantae* Kennedy (Kennedy 1986).

In addition to the striking bracteole morphology mentioned above, Nicolson, *et al.* (1981) noted the following features as characteristic of the new genus *Thymocarpus*: the muricate capsule, the inflorescence borne on a separate shoot, the deciduous prophylls and secondary bracts (both structures noted as "bracts" which, after falling, expose the "...pairs of flowers each borne on its own peduncle." The unusual features of the habit, inflorescence structure and capsule morphology which characterize this species, and hence the genus, are shared to varying degrees with other members of the "Ornata group" in *Calathea*. A tuberculate capsule is found in *Calathea straminea* (the species most closely related to *C. cannoidea*) and *C. bantae*. The capsule of a Panamanian *Calathea* (*Foster & Vocolka 2194* [DUKE]) is distinctly muricate. (This population may represent a distinct subspecies or a very closely related sister species of *C. bantae*). The inflorescence is borne on a separate leafless shoot in *C. zingiberina* Koernicke, *C. elliptica* (Roscoe) Schumann, and *C. straminea*, all members of the "Ornata group." The inflorescence borne on a separate leafless shoot is also characteristic of the unrelated group of species in *Calathea* section *Rhizanthae*. In fact, *C. zingiberina* was initially included in *Calathea* section *Rhizanthae* (Schumann 1902) based on the inflorescence position. In several species of *Calathea* which have the inflorescence borne on a separate shoot, the leafy shoots bear only a solitary leaf. Single leaves per shoot are characteristic of most species in *Calathea* section *Rhizanthae*, such as *C. lancifolia* Boom, *C. bella* (Bull) Regel, *C. vaginata* Petersen, and *C. applicata* Morren. Single leaves are also found in *C. elliptica*, *C. straminea*, and *C. zingiberina* of the "Ornata group." Deciduous bicarinate prophylls are found in *C. bantae* (Kennedy 1986, fig. 1C), *Calathea* sp. (*Foster & Vocolka 2194* [DUKE]) and *Calathea* aff. *straminea* (*Prance 24012* [NY]). According to Schumann (1902, p. 111), in *C. straminea*, the prophyll and secondary bracts (as "mesophyllaque") are absent. In *C. gymnocarpa* Kennedy, both the (primary) bracts and prophylls rot off, leaving the capsules exposed, the secondary bracts are absent altogether.

With the exception of the greatly reduced bracteoles and the deciduous secondary bracts, the additional characters cited are all shared with other species of *Calathea*, especially those in the "Ornata group." Although the combination of characters as a whole is unique, the unusual bracteole mor-

phology and deciduous secondary bracts alone do not constitute a significant enough difference to merit generic status. In addition, this species has a number of additional characters in common with species in the "Ornata group" such as leaf texture, floral morphology, capsule type, bract morphology, and the flower pairs borne on an elongate common pedicel (flower peduncle). It clearly belongs in the genus *Calathea*.

#### ACKNOWLEDGMENTS

I would like to thank Dr. Paul Berry, Dr. John Kress, Dr. Paul Maas, and Dr. Fred Ganders for their reviews and helpful comments on the manuscript. I also thank the curators of DUKE, F, MO, NY, and VEN for the loan of their material.

#### LITERATURE CITED

- Kennedy, H. 1986. Two new striped-leaved species of *Calathea* (Marantaceae) from Ecuador. *Canad. J. Bot.* 64:1321-1326.
- Nicolson, D., J.A. Steyermark, & Sivadasan. 1981. *Thymocarpus cannoides* (Marantaceae), a new genus and species from Venezuela and Brazil. *Brittonia* 33:22-24.
- Schumann, K. 1902. Marantaceae. In: A. Engler. *Das Pflanzenreich*. IV 48:1-184.